WHAT IS CLAIMED:

1. A terpolymer consisting essentially of tyrosine, alanine and lysine randomly polymerized into a polypeptide.

2. The terpolymer of Claim 1 which is substantially free of glutamic acid.

3. The terpolymer of Claim 1 wherein said tyrosine is present in a mole fraction of about 0.005 to about 0.250; said alanine is present in a mole fraction of about 0.3 to about 0.6; and lysine is present in a mole fraction of about 0.1 to about 0.5.

4. The terpolymer of Claim 1 wherein said tyrosine is present in a mole fraction of about 0.10, said alanine is present in a mole fraction of about 0.54, and said lysine is present in a mole fraction of about 0.35.

5. A terpolymer consisting essentially of glutamic acid, tyrosine and lysine randomly polymerized into a polypeptide.

6. The terpolymer of Claim 5 which is substantially free of alanine.

7. The terpolymer of Claim 5 wherein said glutamic acid is present in a mole fraction of about 0.005 to about 0.300; said tyrosine is present in a mole fraction of about 0.005 to about 0.250; and said lysine is present in a mole fraction of about 0.3 to about 0.7.

8. The terpolymer of Claim 5 wherein said glutamic acid is present in a mole fraction of about 0.26, said tyrosine is present in a mole fraction of about 0.16 and said lysine is present in a mole fraction of about 0.58.

9. A terpolymer consisting essentially of glutamic acid, alanine and lysine randomly polymerized into a polypeptide.

10. The terpolymer of Claim 9 which is substantially free of tyrosine.

11. The terpolymer of Claim 9, wherein said glutamic acid is present in a mole fraction of about 0.005 to about 0.300; said alanine is present in a mole fraction of about 0.005 to about 0.600; and said lysine is present in a mole fraction of about 0.2 to about 0.7.

12. The terpolymer of Claim 9 wherein said glutamic acid is present in a mole fraction of about 0.15, said alanine is present in a mole fraction of about 0.48 and said lysine is present in a mole fraction of about 0.36.

13. A terpolymer consisting essentially of tyrosine, glutamic acid and alanine randomly polymerized into a polypeptide, wherein said tyrosine is present in a mole fraction of about 0.005 to about 0.250; said glutamic acid is present in a mole fraction of about 0.005 to about 0.300, and said alanine is present in a mole fraction of about 0.005 to about 0.800.

14. The terpolymer of Claim 13 wherein said tyrosine is present in a mole fraction of about 0.14, said glutamic acid is present in a mole fraction of about 0.21, and said alanine is present in a mole fraction of about 0.65.

15. The terpolymer of Claim 13 which is substantially free of lysine.

16. A pharmaceutical composition for the treatment of an autoimmune disease, comprising a therapeutically effective amount of a terpolymer comprising three different amino acids randomly polymerized into a polypeptide, and a pharmaceutically acceptable carrier, wherein said three different amino acids are selected from the group of tyrosine, glutamic acid, alanine and lysine.

17. The pharmaceutical composition of Claim 16 wherein said terpolymer consists essentially of tyrosine, alanine and lysine.

18. The pharmaceutical composition of Claim 17 wherein said terpolymer is substantially free of glutamic acid.

19. The pharmaceutical composition of Claim 17 wherein said tyrosine is present in a mole fraction of about 0.005 to about 0.250; said alanine is present in a mole fraction of about 0.3 to about 0.6; and lysine is present in a mole fraction of about 0.1 to about 0.5.

20. The pharmaceutical composition of Claim 17 wherein said tyrosine is present in a mole fraction of about 0.10, said alanine is present in a mole fraction of about 0.54,and said lysine is present in a mole fraction of about 0.35.

21. The pharmaceutical composition of Claim 16 wherein said terpolymer consists essentially of glutamic acid, tyrosine and lysine.

22. The pharmaceutical composition of Claim 21 wherein said polypeptide is substantially free of alanine.

23. The pharmaceutical composition of Claim 21 wherein said glutamic acid is present in a mole fraction of about 0.005 to about 0.300; said tyrosine is present in a mole fraction of about 0.005 to about 0.250; and said lysine is present in a mole fraction of about 0.3 to about 0.7.

24. The pharmaceutical composition of Claim 21 wherein said glutamic acid is present in a mole fraction of about 0.26, said tyrosine is present in a mole fraction of about 0.16 and said lysine is present in a mole fraction of about 0.58.

25. The pharmaceutical composition of Claim 16 wherein said terpolymer consists essentially of glutamic acid, alanine and lysine.

26. The pharmaceutical composition of Claim 25 wherein said polypeptide is substantially free of tyrosine.

27. The pharmaceutical composition of Claim 25, wherein said glutamic acid is present in a mole fraction of about 0.005 to about 0.300; said alanine is present in a mole fraction of about 0.005 to about 0.600; and said lysine is

present in a mole fraction of about 0.2 to about 0.7.

28. The pharmaceutical composition of Claim 25 wherein said glutamic acid is present in a mole fraction of about 0.15, said alanine is present in a mole fraction of about 0.48 and said lysine is present in a mole fraction of about 0.36.

29. The pharmaceutical composition of Claim 16 wherein said terpolymer consists essentially of tyrosine, glutamic acid and alanine, and wherein said tyrosine is present in a mole fraction of about 0.005 to about 0.250; said glutamic acid is present in a mole fraction of about 0.005 to about 0.300, and said alanine is present in a mole fraction of about 0.005 to about 0.800.

30. The pharmaceutical composition of Claim 29 wherein said tyrosine is present in a mole fraction of about 0.14, said glutamic acid is present in a mole fraction of about 0.21, and said alanine is present in a mole fraction of about 0.65.

31. The pharmaceutical composition of Claim 29 which is substantially free of lysine.

32. The pharmaceutical composition of Claim 16 wherein said terpolymer has a molecular weight of about 2,000 to about 40,000 daltons.

33. The pharmaceutical composition of Claim 16 wherein said terpolymer has a molecular weight of about 4,000 to about 9,000 daltons.

34. The pharmaceutical composition of Claim 16, wherein said autoimmune disease is a B cell mediated autoimmune disease.

35. The pharmaceutical composition of Claim 16, wherein said autoimmune disease is a T cell mediated autoimmune disease.

36. The pharmaceutical composition of Claim 16, wherein said autoimmune disease is an arthritic condition.

37. The pharmaceutical composition of Claim 16, wherein said autoimmune disease is a demyelinating disease.

38. The pharmaceutical composition of Claim 16, wherein said autoimmune disease is an inflammatory disease.

39. The pharmaceutical composition of Claim 16, wherein said autoimmune disease is multiple sclerosis, autoimmune hemolytic anemia, autoimmune oophoritis, autoimmune thyroiditis, autoimmune uveoretinitis, chronic immune thrombocytopenic purpura, colitis, contact sensitivity disease, diabetes mellitus, Graves disease, Guillain-Barre's syndrome, Hashimoto's disease, idiopathic myxedema, myasthenia gravis, psoriasis, pemphigus vulgaris, rheumatoid arthritis, or systemic lupus erythematosus.

40. A method for treating an autoimmune disease in a mammal which comprises administering a therapeutically effective amount of a terpolymer polypeptide comprising three different amino acids randomly polymerized into a polypeptide, wherein said three different amino acids are selected from the group of tyrosine, glutamic acid, alanine and lysine.

41. The method of Claim 40 wherein said terpolymer polypeptide consists essentially of tyrosine, alanine and lysine.

42. The method of Claim 40 wherein said terpolymer polypeptide consists essentially of glutamic acid, tyrosine and lysine.

43. The method of Claim 40 wherein said terpolymer polypeptide consists essentially of glutamic acid, alanine and lysine.

44. The method of Claim 40 wherein said terpolymer polypeptide consists essentially of tyrosine, glutamic acid and alanine, and wherein said tyrosine is present in a mole fraction of about 0.005 to about 0.250; said glutamic acid is present in a mole fraction of about 0.005 to about 0.300, and said alanine

is present in a mole fraction of about 0.005 to about 0.800.

45. A method for treating an autoimmune disease which comprises administering a therapeutically effective amount of a polypeptide consisting essentially of amino acids tyrosine, glutamic acid, alanine and lysine, wherein said autoimmune disease is not multiple sclerosis.

46

134. A kit for assaying the binding of an analyte to an MHC protein, comprising a water-soluble MHC protein which has been recombinantly produced in a non-mammalian cell, a reaction chamber for containing the analyte and the MHC protein, means for detecting binding of the analyte to the MHC protein, a container, and instructions for use.